

Claims

1.

- 1 A method of making a container that includes the steps of:
- 2 (a) providing a container having a neck,
- 3 (b) providing a container attachment having a circumferentially continuous
- 4 ring,
- 5 (c) telescoping said ring over said neck, and
- 6 (d) radially expanding at least a portion of said neck to secure said attachment
- 7 to said neck.

2.

- 1 The method set forth in claim 1 wherein said attachment has at least one external
- 2 thread segment.

3.

- 1 The method set forth in claim 1 wherein said attachment includes a handle
- 2 coupled to said ring.

4.

- 1 The method set forth in claim 1 wherein said step (a) includes providing at least
- 2 one external engagement element on said neck to engage said ring upon expansion of said neck
- 3 in said step (d):

5.

1 The method set forth in claim 4 wherein said step of providing at least one
2 external engagement element includes providing spaced beads on said neck for engaging said
3 ring.

6.

1 The method set forth in claim 1 wherein at least one of steps (a) and (b) includes
2 providing at least one anti-rotational feature on at least one of said neck and said ring.

7.

1 The method set forth in claim 6 wherein said providing step includes providing
2 knurling on at least one of said neck and said ring.

8.

1 The method set forth in claim 6 wherein said providing step includes providing
2 at least one lug on one of said neck and said ring and at least one corresponding pocket on the
3 other of said neck and said ring such that said at least one lug engages said at least one
4 corresponding pocket.

9.

1 The method set forth in claim 1 wherein step (d) includes axially driving an anvil
2 into said container to radially outwardly expand at least a portion of said neck into engagement
3 with said attachment.

10.

1 The method set forth in claim 9 wherein said step (a) includes providing at least
2 one external engagement element on said neck to engage said ring upon expansion of said neck
3 in said step (d), further wherein said anvil simultaneously expands a finish portion of said neck
4 and said at least one external engagement element on said neck.

11.

1 The method set forth in claim 9 wherein said step (a) includes providing at least
2 one external engagement element on said neck to engage said ring upon expansion of said neck
3 in said step (d), further wherein said anvil expands said at least one external engagement element
4 on said neck but does not expand a finish portion of said neck.

12.

1 A container produced by the method of claim 1.

13.

1 A method of making a handled container that includes the steps of:
2 (a) providing a container having a neck,
3 (b) providing a handle having a circumferentially continuous ring,
4 (c) telescoping said ring externally over said neck, and
5 (d) radially expanding at least a portion of said neck to secure said handle to
6 said neck.

14.

1 The method set forth in claim 13 wherein said attachment ring includes at least
2 external thread forming an externally threaded finish when said ring is secured to said neck in
3 said step (d).

15.

1 The method set forth in claim 13 wherein said neck includes at least one external
2 thread, a capping flange, and a pair of spaced beads.

16.

1 The method set forth in claim 15 wherein said neck and said pair of spaced beads
2 are smaller in diameter than that of said capping flange and said at least one external thread, and
3 wherein said step (d) includes expanding that portion of said neck having said spaced beads
4 without expanding that portion of said neck having said capping flange or said at least one
5 external thread.

17.

1 The method set forth in claim 13 wherein at least one of steps (a) and (b) includes
2 providing at least one anti-rotational feature on at least one of said neck and said ring of said
3 handle.

18.

1 The method set forth in claim 17 wherein said providing step includes providing
2 knurling on at least one of said neck and said ring of said handle.

19.

1 The method set forth in claim 17 wherein said providing step includes providing
2 at least one lug on one of said neck and said ring and at least one corresponding pocket on the
3 other of said neck and said ring such that said at least one lug engages said at least one
4 corresponding pocket.

20.

1 The method set forth in claim 13 wherein step (d) includes axially driving an anvil
2 into an open end of said container to radially outwardly expand at least a portion of said neck into
3 engagement with said ring of said handle.

21.

1 A handled container produced by the method set forth in claim 1

22.

1 A method of making a handled container that includes the steps of:

2 (a) pressure molding a preform having a body and a neck with at least one
3 external engagement element,

4 (b) providing a handle having a circumferentially continuous attachment ring,

5 (c) blow molding said body of said preform to form a body of a container
6 having said neck extending therefrom, and

7 (d) either prior to or subsequent to said step (c):

8 (d1) telescoping said ring of said handle over said neck of said container until
9 said ring is adjacent to said at least one external engagement element, and then

10 (d2) expanding at least a portion of said neck containing said at least one
11 external engagement element radially outwardly into engagement with said ring to secure said
12 handle to said neck.

23.

1 A handled container produced by the method set forth in claim 22.

24.

1 A container that includes:
2 a body,
3 a neck extending from said body, and
4 an attachment that includes an attachment ring encircling a portion of said neck,
5 said portion of said neck being strain hardened by radial expansion against an
6 inside diameter of said attachment ring.

25.

1 An attachment for a container having a body and a neck extending from said body
2 wherein said neck includes a pair of external engagement beads, said attachment includes a ring
3 having an internal diametrical surface having at least one anti-rotational engagement feature,
4 wherein said attachment is adapted for securement to said neck of said container between said
5 pair of external engagement beads by radially outward expansion of said neck and further
6 wherein said pair of external engagement beads axially restrain said ring and said at least one

7 anti-rotational engagement feature rotationally restrains said ring from movement relative to said
8 container.